

REMARKS

A. BACKGROUND

The present Amendment is in response to the Office Action mailed January 21, 2010. Claim 25 has been added. Claims 21-25 remain pending for consideration.

Reconsideration of the application is respectfully requested in view of the above amendments to the claims and the following remarks.

Please note that the following remarks are not intended to be an exhaustive enumeration of the distinctions between any cited references and the claimed invention. Rather, the distinctions identified and discussed below are presented solely by way of example to illustrate some of the differences between the claimed invention and the cited references. In addition, Applicant requests that the Examiner carefully review any references discussed below to ensure that Applicant's understanding and discussion of the references, if any, is consistent with the Examiner's understanding.

I. Claim Rejections Under 35 U.S.C. § 112, Second Paragraph

Claim 22 is rejected under 35 USC 112, second paragraph, as being indefinite. In response, Applicant has added new claim 25 that recites "obtained." With regard to claim 22, Applicant respectfully requests reconsideration because the phraseology is not indefinite and is well understood by one of ordinary skill in the art.

The question is not whether the product is "obtained" or not "obtained," it is that the product is obtainable. It is respectfully submitted that, if a product is "obtainable" by a process, it is excluded that the product is not obtainable because "not obtainable" would be just the opposite of the word "obtainable" and a word cannot designate something and at the same time the opposite thereof. What is "obtainable" includes that the product also might be obtained by another process. And that is intended in the present case since the product of the present invention is novel as will be shown below. It is kindly reminded that in such a case the inventors are entitled to product per se claims which are in the present case expressed as "obtainable."

II. Claim Rejections Under 35 U.S.C. § 103(a)

Claims 21-24 are rejected under 35 USC 103(a) as being unpatentable over Kleemann in view of Reddy, which documents are now of record. Applicant respectfully traverses because a *prima facie* case of obviousness has not been established.

In accordance with Applicant's understanding, Kleemann is a scientific paper for "Investigation of the ammonia adsorption on monolithic SCR catalysts by the transient response analysis." According to the Kleemann paper, a comparison of the capability of adsorbing ammonia onto a catalyst comprising $V_2O_5-WO_3/TiO_2$ with that of a catalyst comprising V_2O_5/TiO_2 was conducted. As indicated in the Office Action, Kleemann is completely silent on rare earth metals and, especially, completely silent on earth metal vanadates. Kleemann does use an ammonium metavanadate, but it is well known that ammonium metavanadates are not rare earth vanadates as they are different chemical entities. One cannot merely replace an ammonium metavanadate with a rare earth vanadate. Also, one would not be motivated to move from an ammonium metavanadate to a vanadate due to the entirety of the reference being directed toward investigation of ammonia adsorption on monoliths SCR catalysts. The use of the ammonium metavanadate is imperative with regard to the Kleemann reference; there would be no valid reason to change the ammonium metavanadate to a rare earth vanadate in view of the study of ammonia adsorption. From Kleemann, a skilled person would not be motivated to use rare earth metals. Further, the skill artisan would not be motivated to use rare earth metal vanadates because there is absolutely no hint or indication to do so. From the teachings of Kleemann, there is no hint or indication to use anything else other than the material described within Kleemann. In part, this is because the Kleemann reference is drawn toward investigating ammonia absorption on monolithic SCR catalysts. There is no teaching or suggestion in Kleemann that provides a valid reason for changing the materials described therein.

In accordance with Applicant's understanding, Reddy is a scientific paper that describes the characterization of CeO_2/SiO_2 and $V_2O_5/CeO_2/SiO_2$ catalyst surfaces by different techniques. However, Reddy is completely silent with regard to TiO_2 and completely silent on WO_3 . The Office Action refers to a " $CeVO_4$ " obtained according to Reddy, however, it is respectfully submitted that that $CeVO_4$ indicated in Reddy is obtained only after calcination with increasing

calcination temperature from 973 to 1073 K, and even higher temperatures as lined out on page 10967, right column second paragraph.

Applicant respectfully asserts that the combination of Kleemann and Reddy do not teach or suggest each and every element of the presently pending claims. The Office Action combines two references that teach various substances and catalysts, but the combination does not result in the presently claimed invention. Even when combined, these two references do not teach or suggest each and every element of the presently pending claims.

Applicant respectfully asserts that the combination of references would have to be modified in order to arrive at the presently claimed invention. Nowhere in the references is it taught to contact "a solid support containing TiO_2 in an amount of at least 70 wt.%, WO_3 in an amount of 5-20 wt.%, and optionally SiO_2 in an amount of up to 15 wt.%" "with a vanadate (REVO_4) of at least one rare earth metal (RE) selected from the group consisting of Y, Ce, Pr, Nd, Sm, Gd, Tb, Dy, Er and Yb to give a slurry which is brought to dryness and calcined," as recited in claim 1. The references, either alone or in combination, do not provide such a teaching. As noted, a metavanadate is not a vanadate, which is well known and distinct.

In view of the combined teachings of Kleemann and Reddy, Applicant respectfully asserts that a skilled person would not be motivated or enabled to use a vanadate of cerium for preparation of the catalyst. Also, a skilled person would not be motivated to use TiO_2 or WO_3 , and would definitely not be motivated to use both TiO_2 and WO_3 . The combination of references only provide valid reasons for using the materials that are described therein, especially in view of the actual teachings of these two references.

Applicant respectfully asserts that the combination of Kleemann and Reddy as proposed in the Office Action is improper as the combination renders Kleemann unsatisfactory for its intended purpose. The case law clearly states that if a proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). In the instant case, Kleemann is a reference that uses ammonium metavanadate to "Investigation of the ammonia adsorption on monolithic SCR catalysts," as is evident from the title of the reference. However, changing ammonia metavanadate to a rare

earth vanadate would change the technology described therein to be modified in a manner that is unsatisfactory for the intended purpose of the investigation of ammonia adsorption. Therefore the proposed combination of Kleemann and Reddy is improper and against the established case law.

Also, Applicant respectfully asserts that the combination of Kleemann and Reddy recited in the Office Action changes the principle operation of the Kleemann reference. The case law clearly states that if the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the reference are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959). In the instant case, the use of a cerium vanadate from Reddy in place of the ammonium metavanadate of Kleemann changes the principle operation of Kleemann for the investigation of ammonia adsorption on monolith SCR catalysts. The combination as proposed in the Office Action necessarily changes the principle operation of Kleemann because it removes ammonium metavanadate which is being used to investigate ammonia adsorption. The ammonium metavanadate is critical to Kleemann and thereby, cannot be removed and substituted by the cerium vanadate from Reddy under the law.

Applicant respectfully asserts that there is no valid reason to make the proposed combination of Kleemann and Reddy. In Kleemann, the problem to be solved obviously is the decrease or increase of adsorption of ammonia. For example, that problem is not at all indicated with the Reddy catalyst. Applicant thereby respectfully asserts that there is no valid reason from to combine these two references because the issue of the Kleemann literature is even not mentioned in Reddy, and it remains unclear whether a catalyst as described in Reddy would or would not add any value or contribute in any way regarding ammonia adsorption onto a catalyst. Therefore, a skilled person would not combine Reddy with Kleemann, and thereby there is no valid reason for making the combination of Reddy with Kleemann.

Applicant also respectfully asserts that only impermissible hindsight allows for the combination of Reddy and Kleemann. The evidence of impermissible hindsight arises by the Office Action asserting that an ammonium metavanadate in Kleemann (investigating ammonia absorption nonetheless) can be replaced by cerium vanadate. Only impermissible hindsight

using the Applicant's claims as a roadmap could result in such an assertion. Moreover, in view of the huge amount of literature existing on catalysts which theoretically all could be combined, only impermissible hindsight would result in selecting from all the catalyst literature existing just the two literature documents recited in this rejection. It is submitted that the combination of references is impossible without the knowledge of the present invention as claimed.

Furthermore, even if combining both references, the process in no way could result in a process according to the present invention. Reconsideration is respectfully requested with regard to one aspect, according to the present invention a rare earth vanadate is added to give a slurry which is brought to dryness and calcined. In contrast, the Ce-vandate of Reddy is only obtained **after calcination** according to Reddy. There is no rare earth vanadate at all in the technology of Kleemann.

In response to the analysis of Applicant's arguments in the instant Office Action, Applicant respectfully asserts that the combination of Kleemann and Reddy does not result in the present invention as described in Applicant's response to the previous Office Action. Since the vanadate according to Reddy only is found **after calcinations**, it is submitted that it does not make a difference whether vanadyloxalate or ammonium metavanadate is used. If a vanadate would be formed in such a combined process it is submitted that in both cases, whether metavanadate or vanadiumoxalate is used the vanadate would be formed. But as was shown in the response to the last Office Action, in such a combined process no vanadates are formed. Therefore, the combination does not result in the presently claimed invention.

In view of the above, it is submitted that firstly the combination of Kleemann and Reddy does not teach or suggest each and every element of the presently claimed invention. Secondly, the combination of Kleemann and Reddy is improper for rendering Kleemann unsatisfactory for its intended purpose and changes the principle of operation of Kleemann. Thirdly, the combination of references is based on improper hindsight because one could only find and combine both references with the knowledge of the presently claimed invention. Fourth, even if Kleemann and Reddy could have been combined by a skilled person, the disclosure thereof would in no way result in a process or product of the presently claimed invention. In view of the above and in consequence, it is submitted that the present invention is not only novel but also

unobvious from prior art and thus inventive. As such, claims 21-24 are allowable over the combination of Kleemann and Reddy, and Applicant respectfully request withdrawal of this rejection.

Conclusion

In the event that the Examiner finds any remaining impediment to a prompt allowance of this application that may be clarified through a telephone interview, the Examiner is respectfully requested to contact the undersigned attorney.

The Commissioner is hereby authorized to charge payment of any of the following fees that may be applicable to this communication, or credit any overpayment, to **Deposit Account No. 23-3178**: (1) any filing fees required under 37 CFR § 1.16; (2) any patent application and reexamination processing fees under 37 CFR § 1.17; and/or (3) any post issuance fees under 37 CFR § 1.20. In addition, if any additional extension of time is required, which has not otherwise been requested, please consider this a petition therefore and charge any additional fees that may be required to **Deposit Account No. 23-3178**.

Dated this 2nd day of November, 2010

Respectfully submitted,

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